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ABSTRACT

A rationale is presented for the use of many cases in policy analysis. Case study families were selected from nomination by early intervention professionals in three states with differing early intervention policies and procedures. Using rating scales, demographic data, and interview transcripts with 72 families of children receiving services, 7 sets of results were found: (1) families reacted positively to services; (2) families had problems with service transitions; (3) numerous service settings were used; (4) the focus of service was primarily on children's needs; (5) control over services varied by demographic variables; (6) psychological well-being was affected by income and race; and (7) perceptions of support differed by demographic variables. The benefits to answering research questions through the use of large-sample case studies and the challenges to implementation are discussed. The combination of quantitative and qualitative methods and data revealed the complexity of interactions among children, parents, professionals, and community systems. Conclusions note implications for policy and practice. (Contains 1 figure and 19 references.) (SLD)

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Large-Sample Case Studies: The Best of Both Worlds

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Large-Sample Case Studies: The Best of Both Worlds

A rationale for the use of many cases in policy analysis is presented. Using rating scales, demographic data, and interview transcripts with 72 families of children receiving early intervention services, 7 sets of results were found: families reacted positively to services, families had problems with service transitions, numerous service settings were used, the focus of services was primarily on children's needs, control over services varied by demographic variables, psychological well-being was affected by income and race, and perceptions of support also differed by demographic variables. The benefits to answering research questions through the use of large-sample case studies and the challenges to implementation are discussed.

The purpose of this paper is to describe a strategy for gathering a wide body of information in order to assess the effectiveness of educational policy. The strategy under discussion is the use of a large number of case studies—in our case, 72. The information we seek is how early intervention services for children birth to 5 years of age, with or at risk for disabilities, are used. These services are supported by federal educational policy under the Individuals with Disabilities Education Act (IDEA). We propose in this paper to show how using large-sample case studies incorporates the benefits of qualitative and quantitative research perspectives.

Theoretical Framework

The conceptual framework for the case studies is shown in Figure 1, where the areas and focus of inquiry (i.e., data sources) are shown. The theoretical constructs consist of how families adapt to having a child with disabilities and to receiving early intervention services; how their thinking might be constrained by their personal experiences with services; where they feel control over their lives and over services is centered; and whether service providers are able to put themselves in others' shoes (theory of mind). Manifestations of these constructs were expected to be detected in both people's reported behaviors and in their thoughts and feelings. The primary but not sole context for our inquiry in the first of two interviews with families and service providers was specific early intervention activities. We were interested in the impact of these forces on both the family and the early intervention system, with a major focus on the parent we interviewed (usually the mother) and the primary service provider, as identified by the parents. We also remained alert to the multiple influences of family members on each other, of service delivery members on each other, and on the transactional interactions between families and service systems. The theoretical framework underlying our design is qualitative research and evaluation (Patton, 1990) with special applicability to case study methods. An important distinction is the incorporation of quantitative information in compiling the case study data.

The quantitative component of large-sample case studies occurs in two ways. First, families and service providers complete a number of measures, such as self-report questionnaires and documentation of services provided. (The case study project is part of a larger early childhood research institute, and the case study families also participate in a large-*N* quantitative investigation.) Second, when many cases are used, researchers can sort cases by categories,

allowing for a degree of generalizability often inappropriate in small-sample case studies. Together, quantitative and qualitative data provide a rich source of information for within- and across-case analyses (Yin, 1989).

The two main issues for researchers are going to be what constitutes a large sample? and what kinds of data can one collect with many cases? Two family research studies using combinations of qualitative and quantitative methods also employed many cases. Rank (1992) conducted interviews with 50 individuals who were drawn from a sample of almost 2,800 households. The quantitative data consisted of economic and demographic on these households over 3 years. In a study of the transition to parenthood of infertile couples (Snadelowski, Holditch-Davis, & Harris, 1992), 80-85 couples were expected to complete protocols of interviews, observations, and monthly symptom inventories. Interviews were handled through qualitative methods, but observations consisted of microbehavioral coding and inventories generated numerical data. Contingency tables were derived from information in the interviews to answer specific questions, so quantitative methods (statistical analyses) were used to analyze qualitatively gathered information.

As Yin (1989) has explained, the use of multiple cases should not be confused with the use of multiple respondents in a statistical study. In a statistical study, the selection of participants should follow sampling logic. In a multiple-case study, however, where cell sizes are usually too small for statistical tests, sampling rules do not pertain. Nevertheless, selection of cases is still organized along conceptual lines of anticipated similarities and dissimilarities. In our research institute, both literal- and theoretical-replication cases were selected. Yin described the former as cases predicting similar results and the latter as cases producing "contrary results but for predictable reasons" (p. 53). Literal replication was accomplished by selecting sites within each state that shared similar population densities. Theoretical replication was accomplished by selecting three states with different early intervention policies and by selecting cases distributed across (a) different levels of the family's needs complexity, (b) race, and (c) child age. Although Yin anticipated only 6-10 cases in multiple-case designs, we took on the mammoth task of selecting 72 cases, which did allow us to have sufficient cell sizes to conduct cross-case statistics.

The Canadian sociologist Jacques Hamel (1993) has discussed the historical debate about the representativeness of the case study or the movement from local to global meaning. He concluded that the aim of the study should determine the number of cases to study, but that any more than one case allowed the first case to be put in perspective. This common argument (i.e., it depends on the research question) may be simplistic but is elucidated by Stake's (1995) description of the intrinsic and the instrumental case study. In the former, a case is chosen because it is inherently interesting: We can learn something by studying this case. In the instrumental case study, the case is chosen because it is likely to reveal something that is already of interest to us: The case becomes an instrument for learning more about a particular phenomenon. Nevertheless, as Stake said, "We do not study a case primarily to understand other cases. Our first obligation is to understand this one case" (p. 4). Large case studies (i.e., employing many cases) therefore helps the researcher make multiple comparisons, find the phenomena in singularities (Petitot, 1977), yet keep the focus on lessons from individual cases.

Perhaps the foremost authority on case study research in education, Robert Yin (1993) has argued that this type of research can be applied anywhere along an epistemological continuum from logical positivism (e.g., Yin, 1993) to qualitative ethnography (e.g., Merriam, 1988). His own predilection, however, was most clearly articulated after his classic textbook (Yin, 1984/1989) was published. Perhaps tired of being thrown in with those who "believe that case studies also can be done where an investigator's intuition and ideas—not reinforced by the objective collection of empirical data—have prevailed" (Yin, 1993, p. 47) he made it clear that the methods he describe lie squarely in "the framework of the scientific method—to develop hypotheses, collect empirical data, and develop conclusions based on the analysis of such data" (p. 47). This approach is similar to the concept of the case study as developed by the (University of) Chicago School (e.g., Burgess, 1927; Hughes, 1971), where the point of conducting case studies was to illustrate through singularities what the Columbia University statistical methods could not (Hamel, 1993). The paradigm wars (Gage, 1989) had not yet begun—wars that many current thinkers (e.g., Patton, 1990; Yin, 1993) reject as a waste of time.

Our framework was one of combining both qualitative and quantitative methods without sacrificing either the epistemological or methodological standards of either one. The qualitative case studies were grounded in loosely constructed interviews with key players: parents of young children with special needs and professionals providing services to those families. Case information also consisted of assessment reports and individualized intervention plans, both of which were provided by the children's service providers. Quantitative data consisted of self-completed questionnaire scores, demographic information, and service use data reported by service providers. These quantitative data could be used as both case material (i.e., for case by case inspection) or statistical material (i.e., for group analyses). Rather than wearing two hats, one qualitative (probably a beret) and one quantitative (probably a hard hat), therefore, we found a way to combine both into a single piece of headgear (an academic mortarboard?)

Methods

Case study families were selected by nomination from early intervention professionals in three states, Colorado, North Carolina, and Pennsylvania. These three states were selected because they differed in their early intervention policies, the contexts in which services are provided (i.e., how services are configured), community demographics (including economics), and geography (West, Southeast, Rust Belt). Participating service providers consisted primarily of early childhood special educators, therapists, and social workers. Most family interviews were conducted in families' homes. After families were recruited through professionals, as described above, and gave consent, researchers visited them in their homes to be interviewed. Two interviews have been conducted with each family, one year apart. Immediately after each interview, the researchers compiled two data reduction protocols recommended by Miles and Huberman (1994). First, an explanatory effects matrix summarizing information about predetermined variables was completed. Second, a support chart mapping all the people and services involved at various levels with the family was drawn. All 1st-year interviews were transcribed.

After reviewing approximately 25 transcripts, 98 codes were developed. Statements or sequences of statements in all 72 transcripts were coded when relevant; codes were neither exhaustive nor mutually exclusive. The purpose of coding the transcripts was to assist in search and retrieval during analysis. After all transcripts had been read and the research team, including investigators on other institute projects, had met twice a month for 6 months, a number of sorting categories were devised for the purpose of determining frequencies of cases. A total of 8 sorting questions were answered. Interrater agreement was checked on 25% of the cases for each question, and percent agreement totaled over 85%.

Chi-square analyses were conducted for sorting frequencies, because these data could be arranged in contingency tables. Analyses of variance (general linear model) were used to determine the relationships of different combinations of sorting and questionnaire variables.

Data Sources

Data sources for generating themes, linking themes, and proposing hypotheses consisted of context matrices, support charts, transcripts themselves, lists of cases by sorting categories, demographic information on children and families, and self-report questionnaire (scales) data. Case sorting categories are described next, followed by the rating scales.

From reading all the transcripts, project investigators identified seven qualitative themes that emerged from the family interview data: *orientation of services* (child or family), *empowerment* (empowered or nonempowered), *family/professional relationship* (bonded, friendly, neutral, or negative), *locus of control* (internal or external), *knowledge of the service system* (high or low), *transportation* (receives or not), *more is better* (believes this or not), and *underserved* (underserved or not). Research staff then sorted the 72 cases according to these characteristics (e.g., either family or child oriented). All the data were sorted independently by two researchers. Interrater agreement on sorting was 95%. Consensus was used for final sorting of those on which researchers originally disagreed.

The four rating-scale questionnaires were the Family Support Scale (Dunst, Jenkins, & Trivette, 1988), which measures the amount and helpfulness the family receives from friends, family, formal sources, and informal sources; the Parental Control Scale (modified from Devellis & Devellis's, 1985, Child Improvement Locus of Control Scale), which measure parents' attribution of control for their child's future to random, divine, parental, and provider control; the Family Feelings and Emotions Scale (a modification of Bradburn's, 1969, Psychological Well-Being Scale), which measures families' positive and negative "affect"; and an abridged version of the Family Beliefs Scale (Dunst & Trivette, 1992), which measures whether families believe services should be rendered with families' controlling services, professionals' controlling services, or child development needs controlling services.

Results

The purpose of this paper is to discuss the methodology, and the summation of our experiences with large-sample case studies are presented in the later section on scientific

importance. In order to show the effectiveness of the methods, the content-related results are summarized in this section; a more extensive report of the findings will appear elsewhere.

The four data sources (interviews, scales, case sortings, and demographics) produced seven major findings. Results are organized by those outcomes.

Families' Reactions to Services

From the interviews, we found that families were extremely positive about their service providers, even when the services those professionals provided did not match the quality of recommended practices in the literature (e.g., Odom, McLean, Johnson, & LaMontagne, 1995). For example, even though home visits were often educational/therapeutic, pull-out services were often used in classroom programs, and clinic-based services were often disconnected from other services, families liked their service providers. this outcome emerged from the interviews and was not assessed through the other methods; interviews were therefore the sole source of this finding.

Problems With Transitions

Interviews showed that families are not happy about making a transition of both services and professionals when the child reaches 3 years of age and *preschool* services take over from *infant/toddler* services (a transition propelled by policy, which divides services into these two programs). Families' fondness for their primary service providers is likely to make this transition even harder than it otherwise would be.

Numerous Settings for Services

Another result emerging only from the interview data was that children and families receive services in a variety of settings, and families occasionally have choices about those settings. The research design involving multiple communities allowed us to see different constellations of service systems. The finding that families were given some choice in some programs reflects one aspect of family-centeredness (e.g., Brinckerhoff & Vincent, 1986) and reflects the importance of having a broad-based definition of *services* (i.e., including formal early intervention services and community resources).

Focus of Services

Interview data also revealed that, despite policies encouraging a family-focused approach to early intervention, services were predominantly child-focused. In terms of the extent to which services were family-centered, professionals were responsive to families' concerns and priorities but they did not focus on parents' needs. Families expected services to focus on children; future analyses will explore the extent to which this expectation is inherent in families concerned about their children's development or the extent to which professionals encourage this focus. Some service providers can be identified as stellar in their family-centeredness, their commitment to providing high-quality services, and in their close relationships with families.

The focus of services was assessed, in addition to interviews, through rating scales, which reveal that White "working poor" parents believe that child development should be the focus of services much more than do non-White "working poor" parents, F (2, 58) = 5.37, p = .0073. Parents in poverty and those with moderate or high incomes, regardless of ethnicity, believe child development should be the focus (i.e., their scale scores approximate White "working poor" families'). "Working poor" parents have less of a belief that parents' desires should be the focus of services, compared to the beliefs of moderate- and high-income parents and parents in poverty, F (2, 58) = 4.92, p = .0106. Parents in poverty have the strongest belief that the system's priorities should be the focus of services, F (2, 56) = 3.40, p = .0403.

Relationships among sorted groups were established, showing that among families classified as child-oriented (i.e., wanting the focus of services to be on the child rather than on the whole family; n = 57), the majority (n = 48) had friendly (as opposed to closely bonded, neutral, or negative) relationships with their service providers (χ^2 = 20.823, p < .0001), whereas among the few families classified as wanting the focus to be on the whole family (n = 6), the majority (n = 4) had closely bonded relationships with their service providers.

Control Over Services

In analyzing the rating scales by the demographics of the families, we found that, among parents of children who enter early intervention services when they are older, those whose families have the most complex needs prefer much professional control, compared to those with fewer needs, F (2, 56) = 3.74, p = .0299. On the other hand, among parents of children who enter services when they are younger, the high-needs families prefer the least professional control, and the moderate-needs families prefer the most professional control. Parents of preschoolers, more than parents of infants and toddlers, believe parents should control services, F (1, 65) = 3.94, p = .0512. This was supported by analyses of the sortings by demographics, where we found that the younger children were, when enrolled in early intervention services, the more likely the family was to be classified as having an internal locus of control (Mantel-Haenszel χ^2 = 4.367, p = .038, φ = .27). These results, together, suggest that a sense of control over services increases over time.

Examination of scales by demographics showed that ethnicity accounted for differences in parents' locus of control: White parents had more internal locus of control than did non-White parents, F (1, 57) = 2.66, p = .1083, d = .43. White parents attributed more control than did non-White parents to random forces, F (1, 57) = 5.14, p = .0272, d = .60. This finding was also supported by our analyses of sortings by demographics: White families were more likely to be classified as having an internal locus of control than were non-White families (Mantel-Haenszel χ^2 = 7.697, p = .006, φ = .39).

When we analyzed relationships among sorted groups, we found that the majority of families classified as empowered (n = 40) were also classified as having internal loci of control (n = 26), and the majority of families classified as unempowered (n = 20) were also classified as having external loci of control (n = 14; χ^2 = 18.246, p = .0001). Furthermore, The majority of families classified as being knowledgeable about early intervention services (n = 45) were also classified as have internal loci of control (n = 29), and the majority of those classified as having

little knowledge of services (n = 14) were also classified as having external loci of control (n = 10; $\chi^2 = 17.779$, p < .0001).

Analysis of sortings by demographics revealed that college-educated parents were more likely to be classified as being empowered ($\chi^2 = 6.820$, p = .033, φ = .334), having high knowledge ($\chi^2 = 3.987$, p = .046, φ = -.27), and having an internal locus of control ($\chi^2 = 9.853$, p = .007, φ = .435), than were high school graduates. Income was also found to affect families' sense of control over services, with high-income families were more likely to be classified as empowered (Mantel-Haenszel $\chi^2 = 5.081$, p = .024, φ = .35), having high knowledge (Mantel-Haenszel $\chi^2 = 4.180$, p = .041, φ = .30), and having an internal locus of control (Mantel-Haenszel $\chi^2 = 3.834$, p = .050, φ = .29) than were moderate-income families or those in poverty. The last group were the most likely to be classified as being unempowered, having low knowledge, and having an external locus of control. The effects of income on these sortings was not found in the analyses using the locus of control scale.

Psychological Well-Being

Analysis of scales by demographics showed that parents' negative affect, as reflected by their answers to an emotions rating scale, vary by income and race, F (2, 58) = 2.94, p = .0606, d = .45. White parents with moderate and high incomes have by far the least negative affect, and non-White parents in poverty have the most negative affect. In contrast, "working poor" non-White parents have less negative affect than do "working poor" White parents.

Support

Scales by demographics analyses revealed two findings about support. First, nonwhite "working poor" parents report receiving the least support from friends, compared to other income groups and compared to White parents, F (2, 58) = 2.60, p = .0825, d = .42. In contrast, the parents reporting receiving the most support from friends were non-White parents with moderate and high incomes. Second, families with the most simple needs reported intrafamilial support as more helpful than did families with moderate or complex needs, F (2, 58) = 5.36, p = .0073. Intrafamilial support was least helpful to families with moderate needs.

These results show how the use of many cases can produce a blending of qualitative and quantitative approaches to data analysis. The findings derived from constant comparative readings of the interview transcripts are consistent with traditional grounded treatment of nonnumerical data. The sortings of cases begin with a qualitative approach, in that decisions about sortings are based on interpretive analysis. The resultant groupings are then used both for nonparametric statistics (e.g., χ^2), for testing for relationships among sorting groups, and for parametric statistics (e.g., ANOVA) for testing for linear relationships between sorting groups (treated as class variables) and continuous rating scale scores. Finally, with a sufficient sample size, traditional statistical tests can be used for examining linear relationships between scale scores and demographic variables. The use of both qualitative and quantitative methods, separately and together, enable researchers both to retain themselves as instruments (i.e., using

themselves for the hermeneutic task of interpretation) and to take advantage of numerical instruments and demographic information.

Educational Importance

The combination of quantitative and qualitative methods and data have therefore revealed, in a unique way, trends in early intervention service use. By embracing in our study the complexity of interactions among children, their parents, professionals, and community systems, we can deduce implications for policy and practice.

First, the system and its service providers are currently limited in their orientation to parents' needs; a sensitive approach to rearranging early intervention priorities to the whole family, instead of primarily the child, would result in more holistic and effective intervention. Furthermore, we hypothesize that families' current satisfaction with a child orientation is secondary to societal and programmatic implications that the early intervention service is primarily child-oriented. If parents were introduced to the concept of early intervention as something that helps the whole family for the ultimate benefit of the child with special needs, they would be more likely to expect a family orientation than a child orientation.

The second implication from our findings is that service provider behaviors are more supportive of families than is "the system." Individual service providers help families when they are vulnerable, they respect families' priorities, and they develop close relationships, especially with mothers. These characteristics appear to exist in all types of communities, but service providers are able to be of the most help when the community has resources to supplement the primary early intervention service. The formal system of services can be unsupportive when it is inflexible (e.g., in eligibility criteria, in scheduling and location options, and in placement options) and limited (i.e., has few service options and does not make use of informal community resources). A study such as this, therefore, can gather information about many specific components of a phenomenon (e.g., individual service provider effects, system effects).

Third, the need for individualized approaches to families is clear. Families' expectations for and reactions to early intervention services are likely to vary because of economic limitations; histories with social service, educational, and health agencies; and cultural and ethnic mores. By definition (see McWilliam, Tocci, & Harbin, 1996), a family-centered approach considers the individual needs of each family (including the parents); is respectful, friendly, positive, responsive, and sensitive; and is "enabling" (Dunst, Trivette, & Deal, 1988). In light of our findings, this approach seems not only desirable but necessary.

These three major implications—increased attention to parents' needs, improvements in the systemic organization of services, and individualization of services—are interrelated. They all involve broadening the current conceptualization of early intervention services, both in terms of individual providers' scope and in terms of the availability of community resources to help providers effect that augmentation. Our findings support the intent of early intervention federal legislation (Gallagher, Trohanis, & Clifford, 1989) and point out that implementation has evolved. Rather than shaking up early intervention (see Dunst, 1985), the legislation has been

met with cautious expansion by providers, personnel preparation programs, and community systems. States and communities have had to make many changes; the gradual implementation suggests they have done what they can in the 10 years since legislation was passed. The use of our large-sample case study suggests ways in which services should now make further steps to more integrated and individualized services—to come closer to the intent of PL 99-457.

Scientific Importance

The scientific importance of the use of large-sample case studies is best described in terms of the benefits to answering research questions and the challenges of implementation. The benefits are that (a) generalizations can be made on the basis of the representativeness of the sample, (b) the iteration of interview themes can be pursued for a long time (i.e., when using a few cases, generating hypotheses ends earlier) and across many types of families, (c) cases can be sorted into sufficiently large groups to perform nonparametric and even inferential analyses, (d) variability within types of cases (e.g., within a sample of single mothers) can be achieved, (e) a large volume of data can be used at single points in time (e.g., during 1st-year data collection), and (f) triangulation (i.e., confirming findings from multiple data sources) was more credible than if only a few cases had been used. In policy implementation studies, the combination of qualitative and quantitative data is important. Many studies focus on one or two variables, using quantitative measures, which makes it difficult to understand the complexities inherent in policy implementation.

The implementation challenges are that (a) a huge number of people (staff, community contacts) had to be involved in recruitment and data collection; (b) to some extent, depth in qualitative data was sacrificed for breadth (but this was compensated for by the incorporation of many quantitative data); and (c) cross-case comparison was demanding because of the volume of transcripts that had to be read many times over. On balance, however, the benefits outweigh the challenges for answering broad-based questions like ours. In policy analysis and in research about systems and their practices, using large-sample case studies is an excellent method so long as adequate funding is available.

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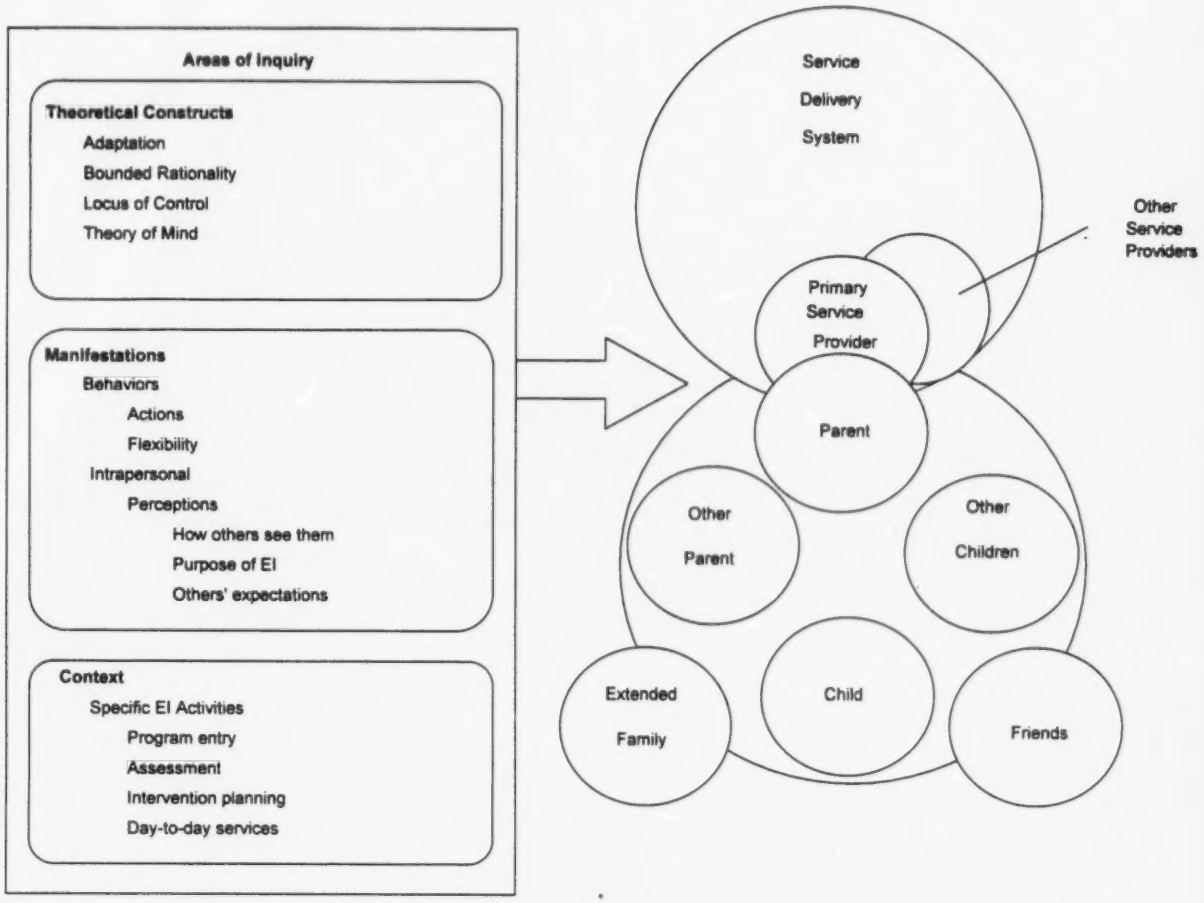

Figure 1. Conceptual framework for case studies in families' use of early intervention services.

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